

Motorola

AUTO RADIO

S E R V I C E M A N U A L

GENERAL INFORMATION

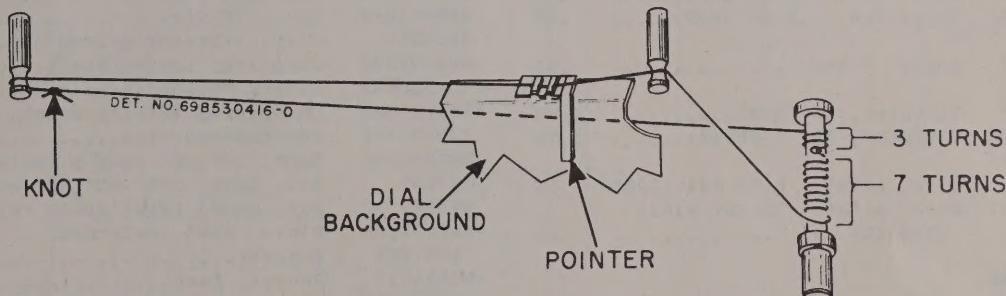
TYPE - Universal automotive type superheterodyne receiver with self-contained speaker. Designed for under-dash mounting. Receiver may be mounted behind instrument panel of some cars by using Trim Plate AK-38. Model 395 for 6 volt cars only; Model 395-12 for 12 volt cars only.

TUNING RANGE - 540 - 1605 Kc IF - 455 Kc

TUBE COMPLEMENT

Model 395: 6BD6 RF amp; 6BE6 conv; 6BD6 IF amp;
6CR6 Det-AVC-1st AF amp; 6AQ5 pwr amp;
6X4 rect.

Model 395-12: 12BD6 RF amp; 12BE6 conv; 12BD6 IF
amp; 12CR6 Det-AVC-1st AF amp;
12AQ5 pwr amp; 12X4 rect.



DIAL RESTRINGING DETAIL

MOTOROLA AUTO RADIO WARRANTY SERVICE STATION PROCEDURE FOR BRANDDED MODELS

1. The definition of a Motorola Branded Model is one that is branded with the Motorola name, and distributed to dealers through authorized Motorola Distributors.

2. Before performing a warranty repair on a Motorola Branded Auto Radio, you must first receive from the customer the Customer's Warranty Policy. This policy must be filled out by the selling dealer at the time of retail purchase. The Customer's Warranty Policy must show the radio to be within the ninety day warranty period if the repair is to be handled under the Motorola Auto Radio Warranty Plan.

3. The removal or reinstallation of the radio, the elimination of motor noise, tire static, electrical interference, or faulty installation and aerial repairs are not considered as warranty repairs. Consequently, charges for these services are to be borne by the customer.

4. Fill in the Motorola Auto Radio Warranty Labor Claim, Part No. 54P480884, and mail White and Green copies to the Motorola Distributor serving your area. The Yellow copy is to be retained by the Warranty Service Station for his files.

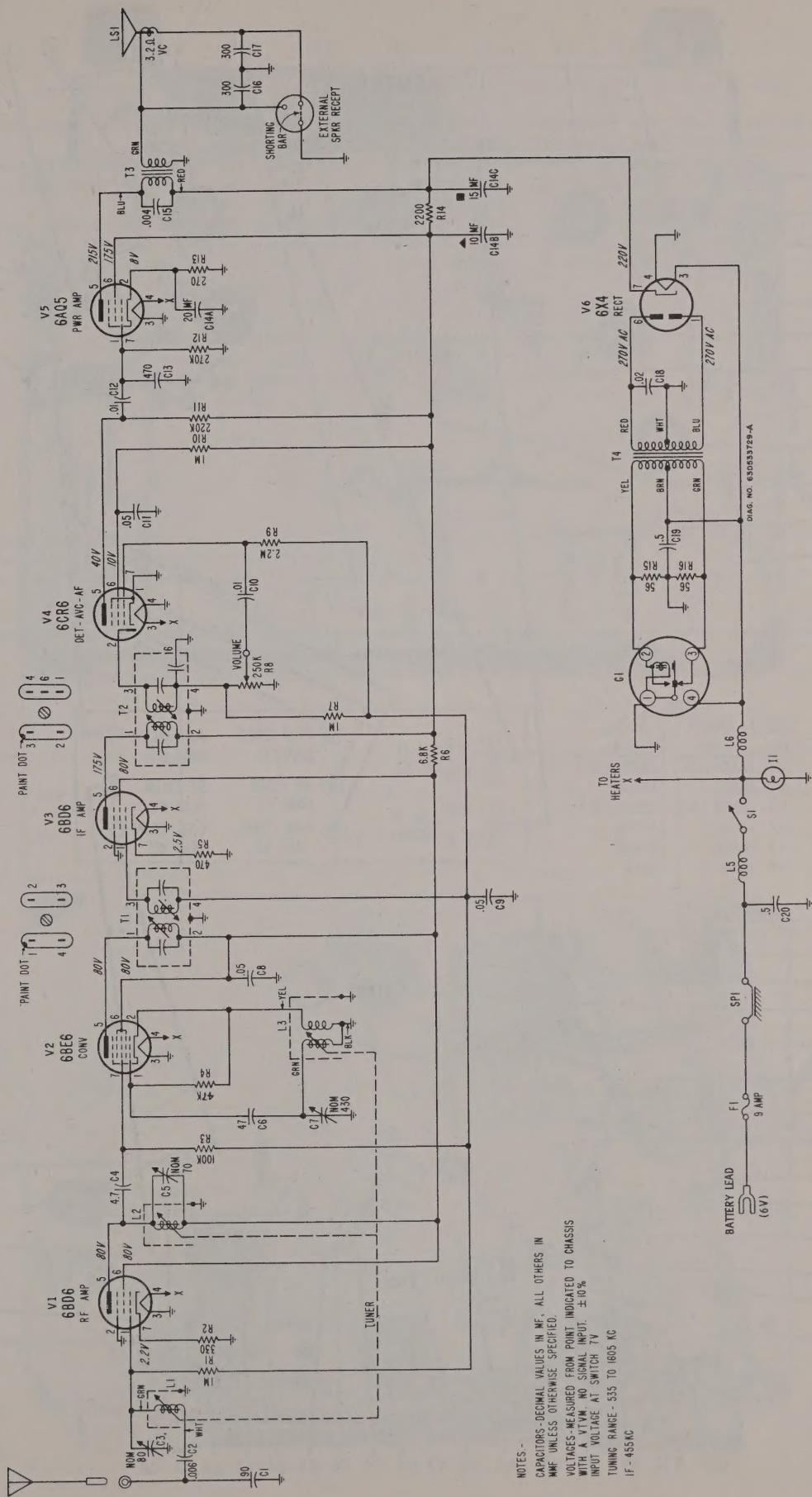
5. Defective parts for warranty repairs made on Motorola Branded Auto Radios are to be sent to your Motorola Distributor for free replacement, supported with the defective parts return form which you are now using.

6. Only those service shops authorized by their Motorola Distributor can perform repairs within the warranty period on a no-charge basis to the customer. If you are not already authorized as a Motorola Auto Radio Warranty Service Station, and you are interested in handling this service, please contact your Motorola Distributor for complete details.

REPLACEMENT PARTS LIST

NOTE: When ordering parts, specify model number of set in addition to part number and description of part.

Ref. No.	Part Number	Description	List Price	Ref. No.	Part Number	Description	List Price
ELECTRICAL PARTS							
C-1	21A591682	Capacitors (Cer = Ceramic; Tub = Tubular; Mld = Molded; Lytic = Electrolytic) Mica, metal: 90 mmf.....	.20	R-12	6R6414	270,000 10% 1/2W.....	.15
C-2	8R121001	Paper Tub: .006 mf 400V....	.25	R-13	6R6432	270 10% 1/2W.....	.15
C-3	20A502338	Trim, mica: 80 mmf nom.....	.45	R-14	6R476130	2200 20% 2W.....	.25
C-4	21R115955	Mld: 4.7 mmf 500V.....	.25	R-15	6R2037	56 10% 1W (395).....	.20
C-5	20A481526	Trim, mica: 70 mmf nom.....	.30		6R6389	220 10% 1W (395-12).....	.20
C-6	21R115953	Cer Disc: 47 mmf 500V NTC 750 PPM.....	.25	R-16	6R2037	56 10% 1W (395).....	.20
C-7	20A485708	Trim, mica: 430 mmf nom....	.55		6R6389	220 10% 1W (395-12).....	.20
C-8	8R121567	Paper Tub: .05 mf 400V....	.25	SP-1	64K532087	Spark Plate.....	.05
C-9	8R121005	Paper Tub: .05 mf 200V....	.25	T-1	24C485553	Trans, 1st IF: 455 Kc.....	1.45
C-10	21R482726	Cer Disc: .01 mf 500V.....	.35	T-2	24K485554	Trans, 2nd IF: 455 Kc.....	1.55
C-11	8R121567	Paper Tub: .05 mf 400V....	.25	T-3	25B70171	Trans, output.....	2.05
C-12	8R121002	Paper Tub: .01 mf 400V....	.25	T-4	25C501303	Trans, power (395).....	4.45
C-13	21R114554	Cer Disc: 470 mmf 500V....	.25		25C521841	Trans, power (395-12).....	5.10
C-14	23A485677	Lytic: 10-15-20mf/350-350-25V	2.25				
C-15	8R121000	Paper Tub: .004 mf 600V....	.25				
C-16, 17	21A522033	Mica, metal: dual 300 mmf 500V.....	.25				
C-18	8R121004	Paper Tub: .02 mf 1000V (395).....	.30				
	8A121549	Paper Tub: .04 mf 1000V (395-12).....	.35				
C-19	8K121666	Paper Tub: .5 mf 100V....	.45	*28A533474	Bar, shorting (spkr socket).....	.03	
C-20	8K121666	Paper Tub: .5 mf 100V....	.45	*7K502387	Bracket, dial background.....	.45	
F-1	65K16248	Fuse: 9 amp.....	.05	43A501295	Bushing, mtg.....	.20	
G-1	48B3333	Vibrator, 6V (395).....	3.80	42B485548	Clip, IF mtg.....	.01	
	48B522000	Vibrator, 12V (395-12)....	4.70	42A4215	Clip, vibrator ground.....	.10	
I-1	65X10867	Bulb, pilot: 6-8V #44 (395)	.15	58A501296	Coupling, tuning shaft.....	.20	
	*65T533821	Bulb, pilot: 12-18V #1891 (395-12).....	.25	*15K533049	Cover, bottom (tube side).....	2.75	
LS-1	50K521882 or 50K522339 or 50C534259	Speaker, PM: 5-1/4"; 3.2 ohm VC.....	4.20	*15K533053	Cover, top (wiring side).....	1.95	
L-1	24B502472	Coil, antenna.....	2.00	13D521747	Escutcheon, dial.....	2.25	
L-2	24B502473	Coil, RF.....	2.00	36K510880	Knob, control (vol & tuning).....	.30	
L-3	24B502474	Coil, osc.....	2.00	2S7051	Nut, hex: 3/8"-32 (vol cont mtg).....	.01	
L-5	24K580706	Choke, RF.....	.10	2S7087	Nut, speed (dial scale ret).....	.01	
L-6	24A472535	Choke, hash (395).....	.40	*64K502388	Plate, dial scale ret.....	.10	
	24A521816	Choke, hash (395-12).....	.35	1A501293	Pointer.....	.25	
Resistors - Note: All resistors are insulated carbon type unless otherwise specified							
R-1	6R6004	1 meg 20% 1/2W.....	.15	*9K533577	Recept, fuse.....	.65	
R-2	6R6022	330 10% 1/2W.....	.15	5K501365	Rivet, shoulder (dial cord guide).....	.05	
R-3	6R6075	100,000 20% 1/2W.....	.15	*34B533826	Scale, dial.....	.25	
R-4	6R6056	47,000 20% 1/2W.....	.15	4S490733	Screw, tapping: #8-18 x 1/4" (escutcheon mtg).....	.02	
R-5	6R6090	470 10% 1/2W.....	.15	3S7118	Setscrew (control knobs).....	.10	
R-6	6R5690	6800 10% 2W.....	.25	47B501362	Shaft, manual tuning.....	.40	
R-7	6R6004	1 meg 20% 1/2W.....	.15	9A472148	Socket, antenna.....	.25	
R-8	18B531560	Volume Control: 250,000 ohms; incl sw.....	1.05	9A70208	Socket, 4-prong (vib).....	.20	
R-9	6R3927	2.2 meg 20% 1/2W.....	.15	9K592354	Socket, pilot light.....	.20	
R-10	6R6004	1 meg 20% 1/2W.....	.15	*9A533475	Socket, 3 pin (spkr).....	.10	
R-11	6R6015	220,000 20% 1/2W.....	.15	9R119819	Socket, tube: 7 pin min; with dummy lug.....	.15	
				41A485380	Spring (coupling shaft).....	.01	
				4K501364	Washer, "C" (tuning shaft).....	.01	
MOUNTING PARTS AND ACCESSORIES							
				7A484424	Bracket & Stud Assem.....	.10	
				7K522056	Bracket (mtgs receiver to dash panel).....	.25	
				7A72256	Bracket, receiver mtg (on rear)...	.10	
				8A4491	Capacitor, generator.....	.85	
				1V531822	Kit, mounting parts and accessories	1.75	
				42A485718	Strap, receiver mtg.....	.15	
				6A44141	Suppressor, distributor.....	.30	



REPLACEMENT PARTS LIST

NOTE: When ordering parts, specify model number of set in addition to part number and description of part.

Ref. No.	Part Number	Description	List Price	Ref. No.	Part Number	Description	List Price
ELECTRICAL PARTS							
		Capacitors (Cer = Ceramic; Tub = Tubular; Mld = Molded; Lytic = Electrolytic)					
C-1	21A591682	Mica, metal: 90 mmf.....	.20	R-12	6R6414	270,000 10% 1/2W.....	.15
C-2	8R121001	Paper Tub: .006 mf 400V....	.25	R-13	6R6432	270 10% 1/2W.....	.15
C-3	20A502338	Trim, mica: 80 mmf nom....	.45	R-14	6R476130	2200 20% 2W.....	.25
C-4	21R115955	Mld: 4.7 mmf 500V.....	.25	R-15	6R2037	56 10% 1W (395).....	.20
C-5	20A481526	Trim, mica: 70 mmf nom....	.30		6R6389	220 10% 1W (395-12).....	.20
C-6	21R11593	Cer Disc: 47 mmf 500V NTC 750 PPM.....	.25	R-16	6R2037	56 10% 1W (395).....	.20
C-7	20A485708	Trim, mica: 430 mmf nom....	.55		6R6389	220 10% 1W (395-12).....	.20
C-8	8R121567	Paper Tub: .05 mf 400V....	.25	SP-1	64K532087	Spark Plate.....	.05
C-9	8R121005	Paper Tub: .05 mf 200V....	.25	T-1	24C485553	Trans, 1st IF: 455 Kc.....	1.45
C-10	21R482726	Cer Disc: .01 mf 500V....	.35	T-2	24K485554	Trans, 2nd IF: 455 Kc.....	1.55
C-11	8R121567	Paper Tub: .05 mf 400V....	.25	T-3	25B70171	Trans, output.....	2.05
C-12	8R121002	Paper Tub: .01 mf 400V....	.25	T-4	25C501303	Trans, power (395).....	4.45
C-13	21R114554	Cer Disc: 470 mmf 500V....	.25		25C521841	Trans, power (395-12).....	5.10
C-14	23A485677	Lytic: 10-15-20mf/350-350-25V	2.25				
C-15	8R121000	Paper Tub: .004 mf 600V....	.25				
C-16,							
17	21A522033	Mica, metal: dual 300 mmf 500V.....	.25				
C-18	8R121004	Paper Tub: .02 mf 1000V (395).....	.30				
	8A121549	Paper Tub: .04 mf 1000V (395-12).....	.35				
C-19	8K121666	Paper Tub: .5 mf 100V....	.45				
C-20	8K121666	Paper Tub: .5 mf 100V....	.45				
F-1	65K16248	Fuse: 9 amp.....	.05				
G-1	48B3333	Vibrator, 6V (395).....	3.80				
	48B522000	Vibrator, 12V (395-12).....	4.70				
I-1	65X10867	Bulb, pilot: 6-8V #44 (395)	.15				
	*65T533821	Bulb, pilot: 12-18V #1891 (395-12).....	.25				
LS-1	50K521882						
or	50K522339						
or	50C534259	Speaker, PM: 5-1/4"; 3.2 ohm VC.....	4.20				
L-1	24B502472	Coil, antenna.....	2.00				
L-2	24B502473	Coil, RF.....	2.00				
L-3	24B502474	Coil, osc.....	2.00				
L-5	24K580706	Choke, RF.....	.10				
L-6	24A472535	Choke, hash (395).....	.40				
	24A521816	Choke, hash (395-12).....	.35				
Resistors - Note: All resistors are insulated carbon type unless otherwise specified							
R-1	6R6004	1 meg 20% 1/2W.....	.15				
R-2	6R6022	330 10% 1/2W.....	.15				
R-3	6R6075	100,000 20% 1/2W.....	.15				
R-4	6R6056	47,000 20% 1/2W.....	.15				
R-5	6R6090	470 10% 1/2W.....	.15				
R-6	6R5690	6800 10% 2W.....	.25				
R-7	6R6004	1 meg 20% 1/2W.....	.15				
R-8	18B531560	Volume Control: 250,000 ohms; incl sw.....	1.05				
R-9	6R3927	2.2 meg 20% 1/2W.....	.15				
R-10	6R6004	1 meg 20% 1/2W.....	.15				
R-11	6R6015	220,000 20% 1/2W.....	.15				
MECHANICAL PARTS							
	*28A533474	Bar, shorting (spkr socket).....	.03				
	*7K502387	Bracket, dial background.....	.45				
	43A501295	Bushing, mtg.....	.20				
	42B485548	Clip, IF mtg.....	.01				
	42A4215	Clip, vibrator ground.....	.10				
	58A501296	Coupling, tuning shaft.....	.20				
	*15K533049	Cover, bottom (tube side).....	2.75				
	*15K533053	Cover, top (wiring side).....	1.95				
	13D521747	Escutcheon, dial.....	2.25				
	36K510880	Knob, control (vol & tuning).....	.30				
	2S7051	Nut, hex: 3/8"-32 (vol cont mtg).	.01				
	2S7087	Nut, speed (dial scale ret).....	.01				
	*64K502388	Plate, dial scale ret.....	.10				
	1A501293	Pointer.....	.25				
	*9K533577	Recept, fuse.....	.65				
	5K501365	Rivet, shoulder (dial cord guide).	.05				
	*34B533826	Scale, dial.....	.25				
	4S490733	Screw, tapping: #8-18 x 1/4" (escutcheon mtg).....	.02				
	3S7118	Setscrew (control knobs).....	.10				
	47B501362	Shaft, manual tuning.....	.40				
	9A472148	Socket, antenna.....	.25				
	9A70208	Socket, 4-prong (vib).....	.20				
	9K592354	Socket, pilot light.....	.20				
	*9A533475	Socket, 3 pin (spkr).....	.10				
	9R119819	Socket, tube: 7 pin min; with dummy lug.....	.15				
	41A485380	Spring (coupling shaft).....	.01				
	4K501364	Washer, "C" (tuning shaft).....	.01				
MOUNTING PARTS AND ACCESSORIES							
	7A484424	Bracket & Stud Assem.....	.10				
	7K522056	Bracket (mtgs receiver to dash panel).....	.25				
	7A72256	Bracket, receiver mtg (on rear)...	.10				
	8A4491	Capacitor, generator.....	.85				
	1V531822	Kit, mounting parts and accessories	1.75				
	42A485718	Strap, receiver mtg.....	.15				
	6A4141	Suppressor, distributor.....	.30				

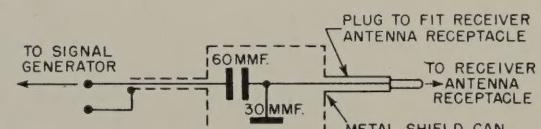
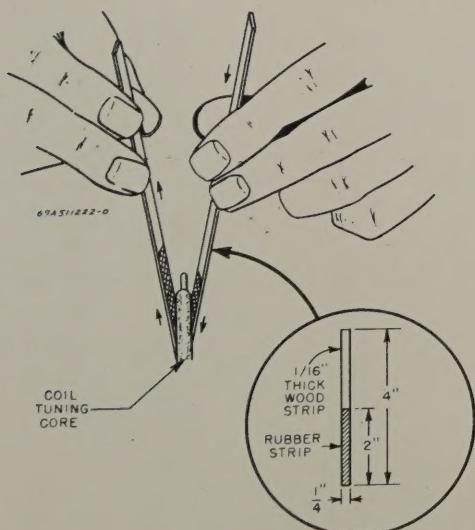
Part Number	Description	List Price	Part Number	Description	List Price
TUNER PARTS LIST (MT-127)					
(See Electrical Parts List for Electrical parts.)					
*77D532163	Tuner, complete (MT-127).....	7.90	5A502510	Grommet, mtg (ant & RF coils).....	.02
	exch 5.95		5K502516	Grommet, mtg (osc coil).....	.05
43K512769	Bushing, stop.....	.05	2A502508	Nut, tension drive.....	.05
42A502507	Clip, spring (manual shaft).....	.10	47A502509	Shaft, manual drive.....	.45
46A502505	Core, iron.....	.35	46A502506	Sleeve, iron.....	.35
5A501013	Grommet, core mtg.....	.03	26A502475	Shield, coil.....	1.25
			4K502518	Washer, fibre (manual shaft).....	.04
			*4A502517	Washer, paper (coil mtg).....	.01

PRICES SUBJECT TO CHANGE WITHOUT NOTICE
 *New Item, Appears in any List for First Time
 **Plus Federal Excise Tax at Current Rate

ALIGNMENT

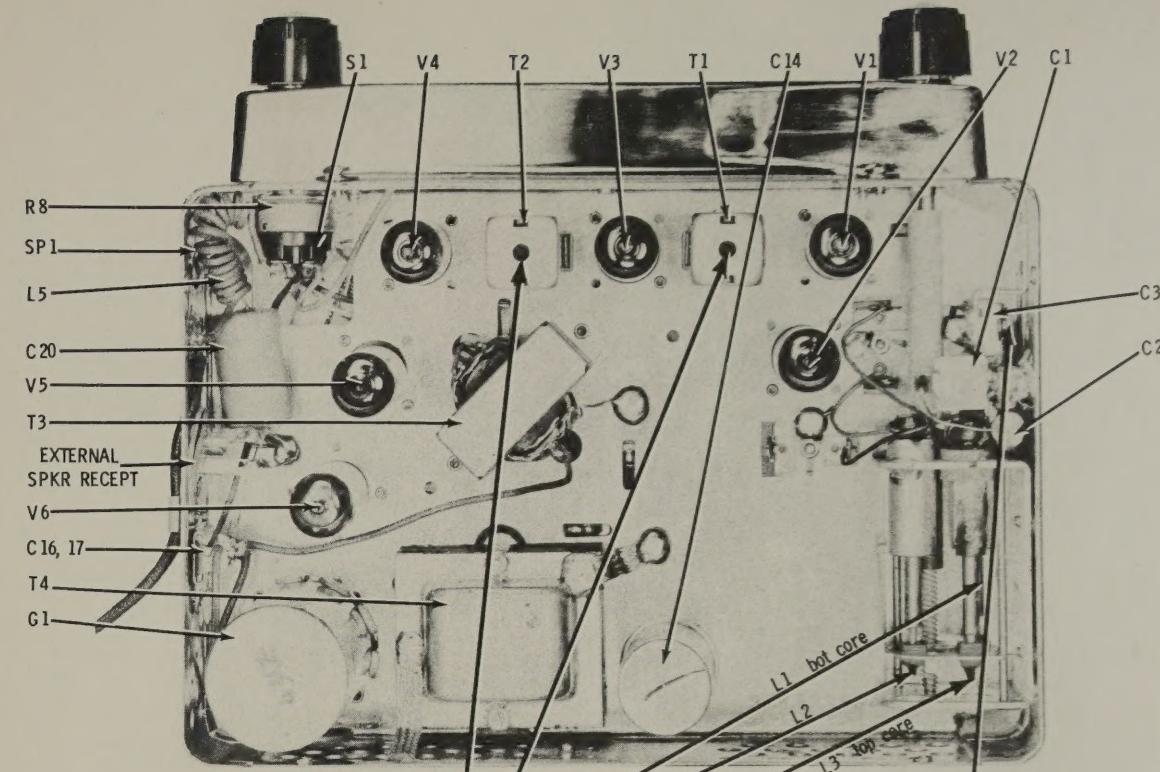
Connect output meter across speaker voice coil. Set volume to maximum. Attenuate generator output to maintain 1.79 volts (1 watt) on output meter to prevent overloading.

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	TUNER SET TO	ADJUST	REMARKS
IF ALIGNMENT 1.	.1 mf	Conv grid (pin 7) & chassis	455 Kc	Hi end stop	1, 2, 3, 4	Peak for maximum.
RF ALIGNMENT Note: Back tuner cores completely out of coils before proceeding. Construct core alignment tools shown below.						
2.	See Fig.	Ant recept	1610 Kc	Hi end stop	5, 6, 7	Peak for maximum.
3.	See Fig.	Ant recept	1400 Kc	29/64" from hi end stop	8, 9, 10	Peak for maximum.
4.	Repeat steps 2 and 3 until no further increase, then cement tuner cores in place.					
5.	-	-	Weak station around 1400 Kc	7		With radio installed in car, peak ant trimmer.



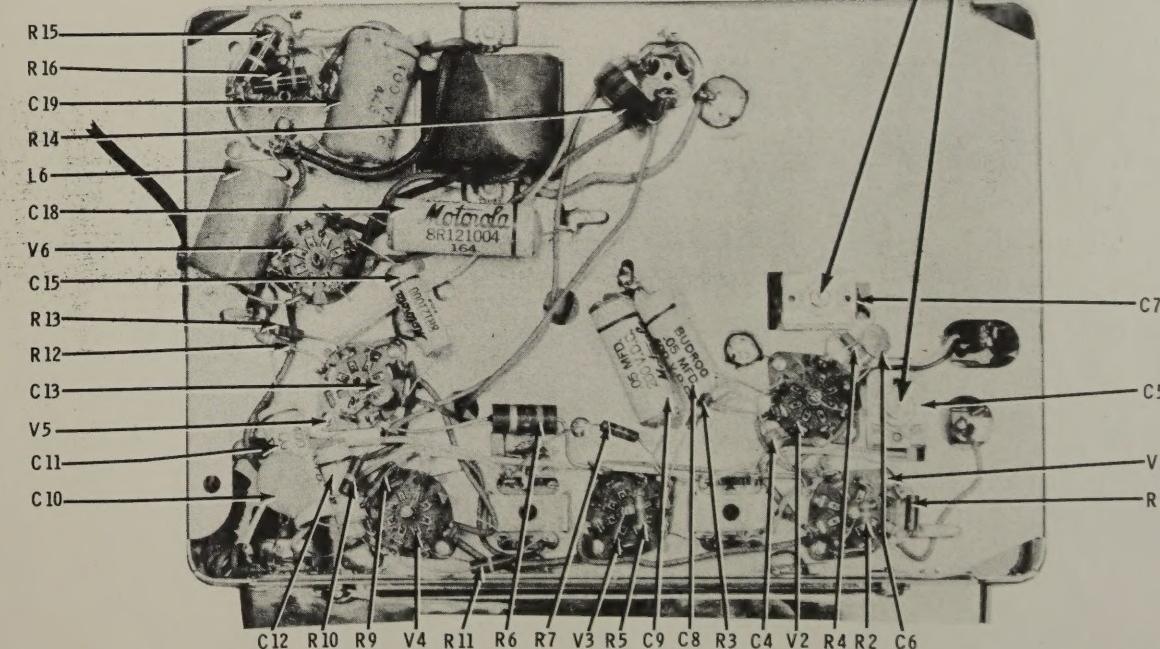
DUMMY ANTENNA DETAIL

CORE ALIGNMENT TOOL DETAIL

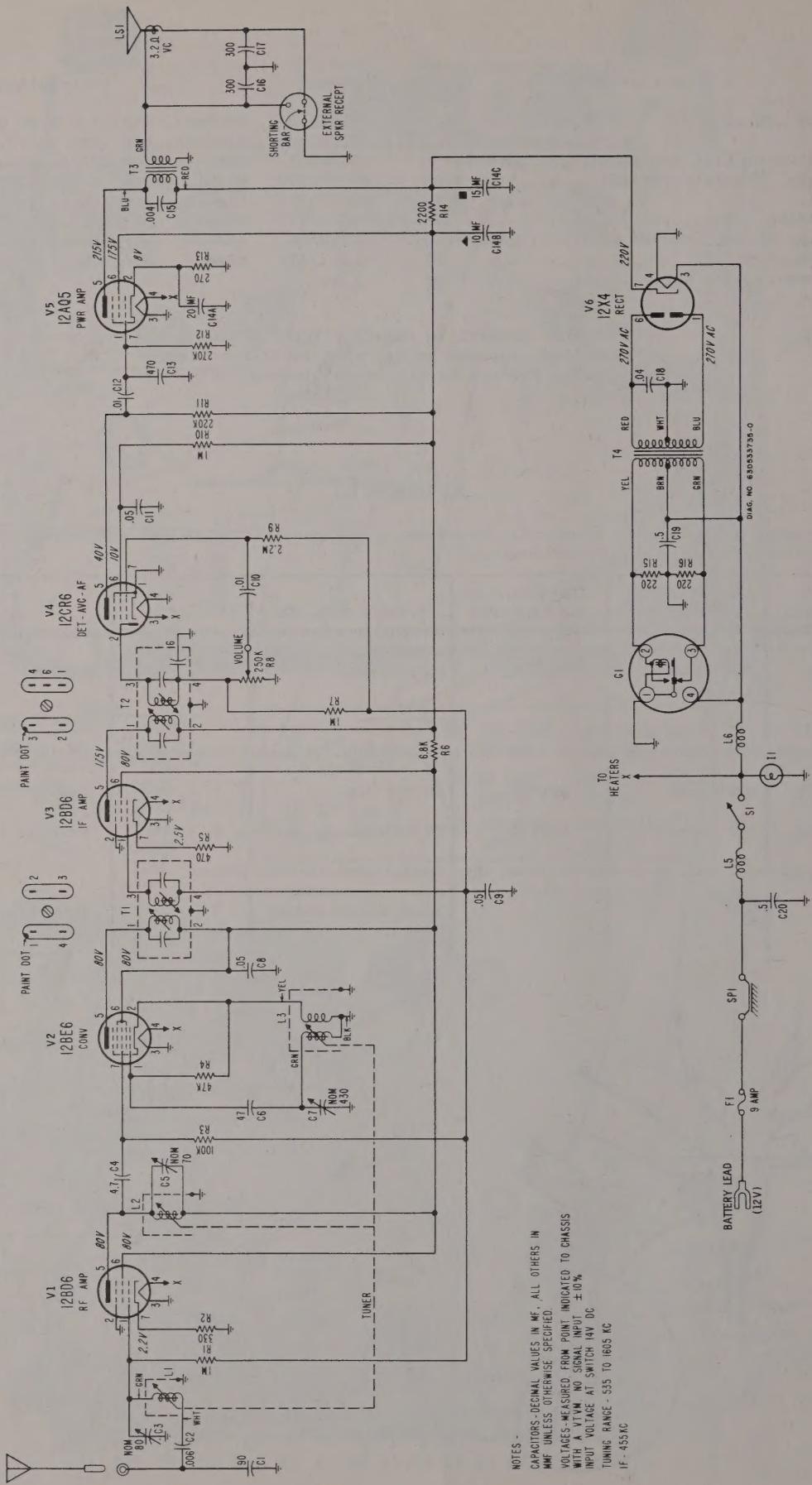


TUBES		
REF. NO.	MODEL	MODEL
395	395	395-12
V1	6BD6 (RF)	12BD6 (RF)
V2	6BE6	12BE6
V3	6BD6 (IF)	12BD6 (IF)
V4	6CR6	12CR6
V5	6AQ5	12A05
V6	6X4	12X4

④ TOP 1st IF	⑧ OSC CORE	ANT TRIM ⑦
③ BOT 455 KC	1400 KC	1610 KC
⑨ RF CORE	1400 KC	RF TRIM 1610 KC
② TOP 2nd IF	1400 KC	OSC TRIM ⑤
① BOT 455 KC	1400 KC	1610 KC



ALIGNMENT ADJUSTMENTS & PARTS LOCATION



MODEL 395-12 SCHEMATIC DIAGRAM